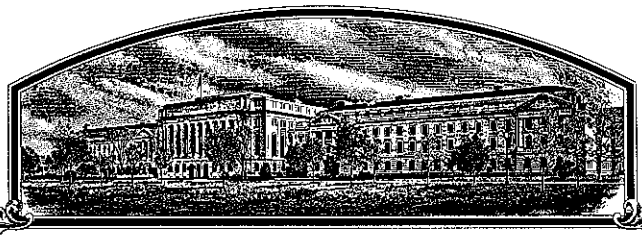

No. 8900109

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

FFR Cooperative

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'FFR 398'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 31st *day of* March *in the year of our Lord one thousand nine hundred and* ninety-two.

Attest:

Kenneth A. Evans

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Edward Madigan

Secretary of Agriculture

APPROVAL EXPIRES 2-28-88

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION	3. VARIETY NAME
FFR Cooperative	14478	FFR 398

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*	5. PHONE *(Include area code)*	FOR OFFICIAL USE ONLY
4112 East State Road 225 West Lafayette, IN 47906	317/567-2115	PVPO NUMBER 8900109

6. GENUS AND SPECIES NAME	7. FAMILY NAME *(Botanical)*	FILING
Glycine Max	Leguminosae	DATE Mar. 6, 1989 TIME 2:00 ☐ A.M. ☒ P.M.

8. KIND NAME	9. DATE OF DETERMINATION	FEES RECEIVED
Soybeans	2/79 JLS 13 January/1992	AMOUNT FOR FILING $ 1800.00 DATE Mar. 6 1989 AMOUNT FOR CERTIFICATE $ 200.00 DATE Mar. 2, 1992

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*	11. IF INCORPORATED, GIVE STATE OF INCORPORATION	12. DATE OF INCORPORATION
Corporation	Wisconsin	

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Dr. Stephen L. Robinson
4112 East State Road 225
West Lafayette, IN 47906

PHONE *(Include area code)*: 317/567-2115

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
d. ☒ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* ☐ Yes *(If "Yes," answer items 16 and 17 below)* ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ Yes ☒ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? ☐ Foundation ☐ Registered ☐ Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? ☐ Yes *(If "Yes," give date)* ☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES ? ☒ Yes *(If "Yes," give names of countries and dates)* U.S. 1-1-89 ☐ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT	DATE
Stephen L. Robinson	3-2-89
SIGNATURE OF APPLICANT	DATE

FORM LS-470 (3-86) *Edition of 7-84 obsolete.*

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14A. Exhibit A (amended)

Origin and Breeding History of the Variety

Pedigree: Mitchell X Essex

'FFR 398' was a single plant selection from a cross of 'Mitchell' X 'Essex' in the F_4 generation at Battle Ground, IN in 1982. The earlier generations were developed using the pedigree selection method at Marshall, MO. In 1983 the seed from the F_4 plant was planted in an observation row at Brookston, IN.

'FFR 398' was first tested in replicated preliminary tests in 1984 at Brookston, IN; Hicksville, OH; and Springfield, OH. It was tested in a four location advanced test and preliminary seed increase was begun in 1985. In the winter of 1985-86 pre-breeder seed was grown at Homestead, FL. In 1986, it was tested in a nine location elite test. Breeder seed was also grown this year at Brookston, IN.

'FFR 398' was first checked for uniformity and stability in the F_5 generation and subsequently in the F_7, F_8, and F_9 generations. During these observations the variety was shown to be uniform and stable. Since the establishment of breeder seed in 1986 and in each subsequent year of breeder seed production the variety has been uniform and stable. 'FFR 398' is essentially free of contaminates at the present time.

14B. Exhibit B

Novelty Statement

'FFR 398' is most similar to 'Mitchell'. 'FFR 398' differs from 'Mitchell' in the following characteristics:

1. 'FFR 398' is approximately nine (9) cm shorter than 'Mitchell'.

2. 'FFR 398' matures 3 days earlier than 'Mitchell'.

3. 'FFR 398' average lodging score is 1.7 compared to 2.8 for 'Mitchell'.

Two year data from Virginia, Maryland, Ohio, Indiana, Nebraska, and Missouri.

Variety	Height - cm -	Relative Maturity	Lodging Score[1/]
FFR 398	86	42	1.7
Mitchell	95	45	2.8

1/ 1-5; 1 = upright

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
FFR Cooperative	14478	FFR 398

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
4112 East State Road 225
West Lafayette, IN 47906

FOR OFFICIAL USE ONLY
PVPO NUMBER
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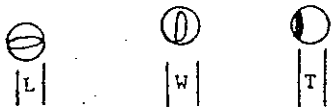
Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[2]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

[1][3] Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

[6] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ 6. COTYLEDON COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

[1] 1 = Low 2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

[2] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ 9. HYPOCOTYL COLOR:

[3] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★10. LEAFLET SHAPE:

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

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11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17')
3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[ ] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton')
3 = Dark Green ('Gnome'; 'Tracy')

★ 13. FLOWER COLOR:

[2] 1 = White 2 = Purple 3 = White with purple throat

★ 14. POD COLOR:

[1] 1 = Tan 2 = Brown 3 = Black

★ 15. PLANT PUBESCENCE COLOR:

[2] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')
3 = Bushy ('Gnome'; 'Govan')

★ 17. PLANT HABIT:

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

[0][7] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V
9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★ [0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

★ [0] Bacterial Blight *(Pseudomonas glycinea)*

★ [0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

★ [0] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [ ] Other *(Specify)* _____

[ ] Target Spot *(Corynespora cassiicola)*

[ ] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[ ] Powdery Mildew *(Microsphaera diffusa)*

★ [0] Brown Stem Rot *(Cephalosporium gregatum)*

[ ] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

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19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [0] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[ ] Purple Seed Stain *(Cercospora kikuchii)*

[ ] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

★ [1] Race 1 [1] Race 2 [1] Race 3 [1] Race 4 [1] Race 5 [1] Race 6 [1] Race 7

[1] Race 8 [1] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[ ] Bud Blight (Tobacco Ringspot Virus)

[ ] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[ ] Pod Mottle (Bean Pod Mottle Virus)

★ [0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [0] Race 2 [1] Race 3 [1] Race 4 [ ] Other *(Specify)* _____

[ ] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[ ] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[ ] Reniform Nematode *(Rotylenchulus reniformis)*

[2] OTHER DISEASE NOT ON FORM *(Specify):* Sudden Death Syndrome

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [0] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[ ] Mexican Bean Beetle *(Epilachna varivestis)*

[ ] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Essex	Seed Coat Luster	Mitchell
Leaf Shape	Mitchell	Seed Size	Mitchell
Leaf Color	Mitchell	Seed Shape	Mitchell
Leaf Size	Essex	Seedling Pigmentation	Mitchell

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Submitted	136	1.7	86	8	13	41.9	19.5	13.3	
Mitchell (Name of Similar Variety)	140	2.8	95	10	14	38.7	21.3	12.9	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

14D. Exhibit D

Additional Description of Variety

'FFR 398' is an early group IV variety. It has purple flowers, brown pubescence, tan colored pods, yellow seed, and a black hilum. 'FFR 398' has excellent standability and emergence. 'FFR 398' has incorporated the thin stem characteristic from its parent 'Essex' into an indeterminate growth potential in 'FFR 398'.

Amended Application for 'FFR 398' (PV# 8900109)

'FFR 398' is 7.6cm shorter than the variety 'Lawrence' (see table A).

'FFR 398' has 1.1 g/100 seed smaller seed than the variety 'S42-30' (see table A).

'FFR 398' is 7 days earlier than the variety 'SS 487' (see table A).

'FFR 398' is 9 cm taller than the variety 'RNB 410' (see table B).

Table A.
Summary of 5 locations from 1988 Kentucky Soybean Preformance Trials

Variety	Height cm	Maturity date	Seed Size g/100 seed
FFR 398	88.9	+1	15.1
Lawrence	96.5	+1	17.5
S42-30	91.4	+1	16.2
SS 487	96.5	+8	16.2

Table B.
Summary of 9 locations from FFR tests

Variety	Height cm
FFR 398	86
RNB 410	77
Mitchell	95

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Amended Application for 'FFR 398' (PV# 8900109)

'FFR 398' is 3.4 days earlier than 'S42-30'.

Location	FFR 398	S42-30	LSD(.05)	C.V. (%)
Seymour, IN	143	141	3.7	1.3
Evansville, IN	143	140	2.3	0.8
Warsaw, VA	145	140	4.3	1.5
Mean	143.7	140.3		

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14E. EXHIBIT E. (amended)

STATEMENT OF THE BASIS OF APPLICANTS OWNERSHIP

'FFR ~~218~~' 398 JLS 13 January 1992 was bred by breeders employed by FFR Cooperative. Employees of FFR Cooperative have no claim or rights of ownership to 'FFR ~~218~~'. Ownership of 'FFR ~~218~~' 398 JLS 13 January 1992 belongs to FFR Cooperative. 398 JLS-13 January 1992

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